

What is claimed is:

1. A method for identifying a subject as a candidate for a particular clinical course of therapy to treat a vascular disease or disorder comprising the steps of:
 - 5 a) determining the identity of one or more of the nucleotides present at nucleotide positions 55322, 53502, 60793, 58445, 52861, and/or 49556 of SEQ ID NO:1, and/or the identity of the nucleotide present at nucleotide position 105290, 118019, and/or 89835 of SEQ ID NO:3, or the complement thereof; and
 - 10 b) identifying the subject as a candidate for a particular clinical course of therapy based on the identity of one or more of the nucleotides present at nucleotide positions 55322, 53502, 60793, 58445, 52861, and/or 49556 of SEQ ID NO:1, and/or the identity of the nucleotide present at nucleotide position 105290, 118019, and/or 89835 of SEQ ID NO:3, or the complement thereof.
- 15 2. The method of claim 1, wherein determining the identity of the nucleotides is by obtaining a nucleic acid sample from the subject.
- 20 3. The method of claim 1, wherein the clinical course of therapy is use of a medical device.
- 25 4. The method of claim 1, wherein the clinical course of therapy is use of a surgical procedure.
- 30 5. The method of claim 3, wherein said medical device is selected from the group consisting of: a defibrillator, a stent, a device used in coronary revascularization, a pacemaker, and any combination thereof.
6. The method of claim 3, wherein said medical device is used in combination with a modulator of THBS1 and/or THBS4 gene expression or THBS1 and/or THBS4 polypeptide activity.

7. The method of claim 4, wherein said surgical procedure is selected from the group consisting of: percutaneous transluminal coronary angioplasty, laser angioplasty, implantation of a stent, coronary bypass grafting, implantation of a defibrillator, implantation of a pacemaker, and any combination thereof.

8. A method for identifying a subject who is a candidate for further diagnostic evaluation for a vascular disease or disorder comprising the steps of:

a) determining the identity of one or more of the nucleotides present at nucleotide positions 55322, 53502, 60793, 58445, 52861, and/or 49556 of SEQ ID NO:1, and/or the identity of the nucleotide present at nucleotide position 105290, 118019, and/or 89835 of SEQ ID NO:3, or the complement thereof; and

b) identifying the subject as a subject who is a candidate for further diagnostic evaluation for a vascular disease or disorder based on the identity of one or more of the nucleotides present at nucleotide positions 55322, 53502, 60793, 58445, 52861, and/or 49556 of SEQ ID NO:1, and/or the identity of the nucleotide present at nucleotide position 105290, 118019, and/or 89835 of SEQ ID NO:3, or the complement thereof, or the complement thereof.

9. The method of claim 8, wherein determining the identity of the nucleotides is by obtaining a nucleic acid sample from the subject.

10. The method of claim 8, wherein said further diagnostic evaluation consists of use of one or more vascular imaging devices.

11. The method of claim 10, wherein said vascular imaging device is selected from the group consisting of: angiography, cardiac ultrasound, coronary angiogram, magnetic resonance imagery, nuclear imaging, CT scan, myocardial perfusion imagery, electrocardiogram, and any combination thereof.

12. The method of claim 8, wherein further diagnostic evaluation is selected from the group consisting of: genetic analysis, familial health history analysis, lifestyle analysis, exercise stress tests, and any combination thereof.

5 13. A method for selecting a clinical course of therapy to treat a subject who is at risk for developing a vascular disease or disorder comprising the steps of:

- 10 a) determining the identity of one or more of the nucleotides present at nucleotide positions 55322, 53502, 60793, 58445, 52861, and/or 49556 of SEQ ID NO:1, and/or the identity of the nucleotide present at nucleotide position 105290, 118019, and/or 89835 of SEQ ID NO:3, or the complement thereof; and
- 15 b) selecting a clinical course of therapy for treatment of a subject who is at risk for developing a vascular disease or disorder based on the identity of one or more of the nucleotides present at nucleotide positions 55322, 53502, 60793, 58445, 52861, and/or 49556 of SEQ ID NO:1, and/or the identity of the nucleotide present at nucleotide position 105290, 118019, and/or 89835 of SEQ ID NO:3, or the complement thereof.

20 14. The method of claim 13, wherein determining the identity of the nucleotides is by obtaining a nucleic acid sample from the subject.

15. The method of claim 13, wherein the clinical course of therapy comprises use of a medical device for treating a vascular disease or disorder.

25 16. The method of claim 15, wherein said medical device is selected from the group consisting of: a defibrillator, a stent, a device used in coronary revascularization, a pacemaker, and any combination thereof.

30 17. The method of claim 15, wherein said medical device is used in combination with a modulator of modulators of THBS1 and/or THBS4 gene expression or THBS1 and/or THBS4 polypeptide activity.

18. The method of claim 13, wherein said clinical course of therapy is use of a surgical procedure.

5 19. The method of claim 18, wherein said surgical procedure is selected from the group consisting of: percutaneous transluminal coronary angioplasty, laser angioplasty, implantation of a stent, coronary bypass grafting, implantation of a defibrillator, implantation of a pacemaker, and any combination thereof.

10 20. A method for determining whether a subject will benefit from implantation of a stent comprising the steps of:

- 15 a) determining the identity of one or more of the nucleotides present at nucleotide positions 55322, 53502, 60793, 58445, 52861, and/or 49556 of SEQ ID NO:1, and/or the identity of the nucleotide present at nucleotide position 105290, 118019, and/or 89835 of SEQ ID NO:3, or the complement thereof; and
- b) determining whether a subject will benefit from implantation of a stent based on the identity of one or more of the nucleotides present at nucleotide positions 55322, 53502, 60793, 58445, 52861, and/or 49556 of SEQ ID NO:1, and/or the identity of the nucleotide present at nucleotide position 105290, 118019, and/or 89835 of SEQ ID NO:3, or the complement thereof.
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21. The method of claim 20, wherein determining the identity of the nucleotides is by obtaining a nucleic acid sample from the subject.

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22. A method for determining whether a subject will benefit from use of a vascular imaging procedure comprising the steps of:

- a) determining the identity of one or more of the nucleotides present at nucleotide positions 55322, 53502, 60793, 58445, 52861, and/or 49556 of SEQ ID NO:1, and/or the identity of the nucleotide present at nucleotide position 105290, 118019, and/or
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89835 of SEQ ID NO:3, or the complement thereof; and

- b) determining whether a subject will benefit from use of a vascular imaging procedure based on the identity of one or more of the nucleotides present at nucleotide positions 55322, 53502, 60793, 58445, 52861, and/or 49556 of SEQ ID NO:1, and/or the identity of the nucleotide present at nucleotide position 105290, 118019, and/or 89835 of SEQ ID NO:3, or the complement thereof.

23. The method of claim 22, wherein determining the identity of the nucleotides is by obtaining a nucleic acid sample from the subject.

24. The method of claim 22, wherein said vascular imaging procedure is selected from the group consisting of angiography, cardiac ultrasound, coronary angiogram, magnetic resonance imagery, nuclear imaging, CT scan, myocardial perfusion imagery, electrocardiogram, and any combination thereof.

25. A method for determining whether a subject will benefit from a surgical procedure comprising the steps of:

a) determining the identity of one or more of the nucleotides present at nucleotide positions 55322, 53502, 60793, 58445, 52861, and/or 49556 of SEQ ID NO:1, and/or the identity of the nucleotide present at nucleotide position 105290, 118019, and/or 89835 of SEQ ID NO:3, or the complement thereof; and

b) determining whether a subject will benefit from a surgical procedure based on the identity of one or more of the nucleotides present at nucleotide positions 55322, 53502, 60793, 58445, 52861, and/or 49556 of SEQ ID NO:1, and/or the identity of the nucleotide present at nucleotide position 105290, 118019, and/or 89835 of SEQ ID NO:3, or the complement thereof.

26. The method of claim 25, wherein determining the identity of the nucleotides is by obtaining a nucleic acid sample from the subject.

27. The method of claim 25, wherein said surgical procedure is selected from the group consisting of percutaneous transluminal coronary angioplasty, laser angioplasty, implantation of a stent, coronary bypass grafting, implantation of a defibrillator, implantation of a pacemaker, and any combination thereof.

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28. A method for selecting an effective vascular imaging device as a diagnostic tool in a subject comprising the steps of:

a) the identity of one or more of the nucleotides present at nucleotide positions 55322, 53502, 60793, 58445, 52861, and/or 49556 of SEQ ID NO:1, and/or the identity of the nucleotide present at nucleotide position 105290, 118019, and/or 89835 of SEQ ID NO:3, or the complement thereof; and

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b) selecting an effective vascular imaging device as a diagnostic tool for said subject based on the identity of one or more of the nucleotides present at nucleotide positions 55322, 53502, 60793, 58445, 52861, and/or 49556 of SEQ ID NO:1, and/or the identity of the nucleotide present at nucleotide position 105290, 118019, and/or 89835 of SEQ ID NO:3, or the complement thereof.

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29. The method of claim 28, wherein determining the identity of the nucleotides is by obtaining a nucleic acid sample from the subject.

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30. The method of claim 28, wherein said vascular imaging device is selected from the group consisting of: angiography, cardiac ultrasound, coronary angiogram, magnetic resonance imagery, nuclear imaging, CT scan, myocardial perfusion imagery, electrocardiogram, and any combination thereof.

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31. A computer readable medium for storing instructions for performing a computer implemented method for determining whether or not a subject has a predisposition to a vascular disease or disorder, said instructions comprising the functionality of:

obtaining information from the subject indicative of the presence or absence of the polymorphic region of a THBS2, ACE, and/or a FGB gene, and

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based on the presence or absence of the polymorphic region of a THBS2, ACE, and/or a FGB gene, determining whether or not the subject has a predisposition to a vascular disease or disorder.

- 5 32. A computer readable medium for storing instructions for performing a computer implemented method for identifying a predisposition to a vascular disease or disorder, said instructions comprising the functionality of:

obtaining information regarding the presence or absence of the polymorphic region of a THBS2, ACE, and/or a FGB gene, and

- 10 based on the presence or absence of the polymorphic region of a THBS2, ACE, and/or a FGB gene, identifying a predisposition to a vascular disease or disorder.

33. An electronic system comprising a processor for determining whether or not a subject has a predisposition to a vascular disease or disorder, said processor implementing
15 the functionality of:

obtaining information from the subject indicative of the presence or absence of the polymorphic region of a THBS2, ACE, and/or a FGB gene, and

- based on the presence or absence of the polymorphic region of a THBS2, ACE, and/or a FGB gene, determining whether or not the subject has the predisposition to a
20 vascular disease or disorder.

34. An electronic system comprising a processor for performing a method for identifying a predisposition to a vascular disease or disorder in a subject, said processor implementing the functionality of:

- 25 obtaining information from the subject indicative of the presence or absence of the polymorphic region of a THBS2, ACE, and/or a FGB gene, and

 based on the presence or absence of the polymorphic region of a THBS2, ACE, and/or a FGB gene, performing a method for identifying a predisposition to a vascular disease or disorder associated with the polymorphic region.

35. The electronic system of claims 33 or 34, wherein said processor further implements the functionality of receiving phenotypic information associated with the subject.

5 36. The electronic system of claims 33 or 34, wherein said processor further implements the functionality of acquiring from a network phenotypic information associated with the subject.

37. A network system for identifying a predisposition to a vascular disease or disorder in response to information submitted by an individual, said system comprising
10 means for:

receiving data from the individual regarding the presence or absence of the polymorphic region of a THBS2, ACE, and/or a FGB gene, and

based on the presence or absence of the polymorphic region, determining whether or not the subject has the predisposition to the vascular disease or disorder associated with the
15 polymorphic region.

38. A network system for identifying whether or not a subject has a predisposition to a vascular disease or disorder, said system comprising means for:

receiving information from the subject regarding the polymorphic region of a
20 THBS2, ACE, and/or a FGB gene,

receiving phenotypic information associated with the subject,

acquiring additional information from the network, and

based on one or more of the phenotypic information, the polymorphic region, and the acquired information, determining whether or not the subject has a pre-disposition to a
25 vascular disease or disorder associated with a polymorphic region of a THBS2, ACE, and/or a FGB gene.

39. The system of claims 37 and 38, wherein the network system comprises a server and a work station operatively connected to said server via the network.

40. A method for diagnosing or aiding in the diagnosis of a vascular disease or disorder in a subject comprising the steps of determining the THBS1 and/or THBS4 genetic profile of the subject, thereby diagnosing or aiding in the diagnosis of a vascular disease or disorder.

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41. The method of claim 40, wherein determining the subject's THBS1 and/or THBS4 genetic profile comprises determining the identity of one or more of the nucleotides present at nucleotide positions 55322, 53502, 60793, 58445, 52861, and/or 49556 of SEQ ID NO:1, and/or the identity of the nucleotide present at nucleotide position 105290, 118019, and/or 89835 of SEQ ID NO:3, or the complement thereof.

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42. The method of claim 40, further comprising utilizing a vascular imaging device to diagnose or aid in the diagnosis of a vascular disease or disorder.

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43. The method of claim 42, wherein the vascular imaging device is selected from the group consisting of: angiography, cardiac ultrasound, coronary angiogram, magnetic resonance imagery, nuclear imaging, CT scan, myocardial perfusion imagery, electrocardiogram, and any combination thereof.

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44. A method for selecting the appropriate drug to administer to a subject who has, or is at risk of developing, a vascular disease or disorder, comprising determining the molecular structure of at least a portion of a THBS1 and/or a THBS4 gene of the subject.

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45. The method of claim 44, wherein determining the molecular structure comprises determining the identity of the allelic variant of at least one polymorphic region of the THBS1 and/or THBS4 gene of the subject.

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46. The method of claim 44, wherein determining the molecular structure comprises determining the identity of the allelic variant of at least one polymorphic region of the THBS1 and/or THBS4 gene of the subject.

47. A method for treating a subject having a disease or condition associated with a specific allelic variant of a polymorphic region of a THBS1 and/or a THBS4 gene, comprising the steps of:

- 5 (a) determining the identity of a THBS1 and/or a THBS4 allelic variant;
 and
 (b) administering to the subject a compound that modulates THBS1
 and/or THBS4 gene expression or protein activity.

10 48. The method of claim 47, wherein the specific allelic variant comprises a nucleotide sequence selected from the group consisting of those set forth in one or more of SEQ ID NO:5, SEQ ID NO:6, SEQ ID NO:7, SEQ ID NO:8, SEQ ID NO:9, SEQ ID NO:10, SEQ ID NO:11, SEQ ID NO:12, or SEQ ID NO:13, or the complements thereof.

15 49. A method of diagnosing or aiding in the diagnosis of a vascular disease in a subject comprising determining the nucleotide at nucleotide position 55322, 53502, 60793, and/or 58445 of SEQ ID NO:1, and/or the identity of the nucleotide present at nucleotide position 105290, 118019, and/or 89835 of SEQ ID NO:3, or the complement thereof, wherein the presence of at least one variant allele, or the complement thereof, is indicative of
20 increased likelihood of a vascular disease in the subject as compared with a subject having the reference allele at one or more of these loci.

 50. The method of claim 49, wherein determining the identity of the nucleotides is by obtaining a nucleic acid sample from the subject.

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 51. A method of diagnosing or aiding in the diagnosis of a vascular disease in a subject comprising determining the nucleotide at nucleotide position 52861 and/or 49556 of SEQ ID NO:1, or the complement thereof,

 wherein the presence of at least one variant allele, or the complement thereof, is
30 indicative of decreased likelihood of a vascular disease in the subject as compared with a

subject having the reference allele at one or more of these loci.

52. The method of claim 51, wherein determining the identity of the nucleotides is by obtaining a nucleic acid sample from the subject.

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53. The method of claims 49 or 51, wherein the vascular disease is selected from the group consisting of atherosclerosis, coronary artery disease, myocardial infarction, ischemia, stroke, peripheral vascular diseases, venous thromboembolism and pulmonary embolism.

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54. The method of claim 53, wherein the vascular disease is myocardial infarction.

55. The method of claim 53, wherein the vascular disease is coronary artery disease.

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56. A method for predicting the likelihood that a subject will have a vascular disease, comprising determining the nucleotide at nucleotide position 55322, 53502, 60793, and/or 58445 of SEQ ID NO:1, and/or the identity of the nucleotide present at nucleotide position 105290, 118019, and/or 89835 of SEQ ID NO:3, or the complement thereof, wherein the presence of at least one variant allele, or the complements thereof, is indicative of increased likelihood of a vascular disease in the subject as compared with a subject having the reference allele at one or more of these loci.

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57. The method of claim 56, wherein determining the identity of the nucleotides is by obtaining a nucleic acid sample from the subject.

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58. A method for predicting the likelihood that a subject will have a vascular disease, comprising determining the nucleotide at nucleotide position 52861 and/or 49556 of SEQ ID NO:1, or the complement thereof,

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wherein the presence of at least one variant allele, or the complements thereof, is indicative of increased likelihood of a vascular disease in the subject as compared with a subject having the reference allele at one or more of these loci.

5 59. The method of claim 58, wherein determining the identity of the nucleotides is by obtaining a nucleic acid sample from the subject.

 60. The method of claim 56 or 58, wherein the vascular disease is selected from the group consisting of atherosclerosis, coronary artery disease, myocardial infarction,
10 ischemia, stroke, peripheral vascular diseases, venous thromboembolism and pulmonary embolism.

 61. The method of claim 60, wherein the vascular disease is myocardial infarction.
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 62. The method of claim 60, wherein the vascular disease is coronary artery disease.

 63. An isolated nucleic acid molecule comprising a nucleotide sequence
20 comprising an allelic variant of a polymorphic region of a THBS1 gene, and allelic variants in linkage disequilibrium therewith, or the complement thereof, wherein the allelic variant differs from the reference sequence set forth in SEQ ID NO:1, and wherein the allelic variant is associated with vascular disease.

25 64. An isolated nucleic acid molecule comprising a nucleotide sequence comprising an allelic variant of a polymorphic region of a THBS4 gene, and allelic variants in linkage disequilibrium therewith, or the complement thereof, wherein the allelic variant differs from the reference sequence set forth in SEQ ID NO:3, and wherein the allelic variant is associated with vascular disease.
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65. A kit comprising probes or primers which are capable of hybridizing to the nucleic acid molecule of one of claims 63 and 64.

66. The kit of claim 65, wherein the probes or primers comprise a nucleotide
5 sequence from about 15 to about 30 nucleotides.

67. The kit of claim 66, wherein the probes or primers are labeled.

68. A method for determining the identity of one or more allelic variants of a
10 polymorphic region of a THBS1 and/or THBS4 gene in a nucleic acid obtained from a
subject, comprising contacting a sample nucleic acid from the subject with probes or primers
having sequences which are complementary to a THBS1 and/or THBS4, wherein the sample
comprises a THBS1 and/or THBS4 gene sequence, thereby determining the identity of one or
more of the allelic variants.

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69. The method of claim 68, wherein the probes or primers are capable of
hybridizing to an allelic variant of a polymorphic region, and wherein the allelic
variant differs from the reference sequence set forth in SEQ ID NO: 1 or SEQ ID NO:
3.

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70. The method of claim 68, wherein determining the identity of the allelic
variant comprises determining the identity of at least one nucleotide of the polymorphic
region of a THBS1 gene and/or a THBS4 gene.

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71. The method of claim 68, wherein determining the identity of the allelic
variant consists of determining the nucleotide content of the polymorphic region.

72. The method of claim 68, wherein determining the nucleotide content
comprises sequencing the nucleotide sequence.

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73. The method of claim 68, wherein determining the identity of the allelic variant comprises performing a restriction enzyme site analysis.

74. The method of claim 68, wherein determining the identity of the allelic variant is carried out by single-stranded conformation polymorphism.

75. The method of claim 68, wherein determining the identity of the allelic variant is carried out by allele specific hybridization.

76. The method of claim 68, wherein determining the identity of the allelic variant is carried out by primer specific extension.

77. The method of claim 68, wherein determining the identity of the allelic variant is carried out by an oligonucleotide ligation assay.

78. The method of claim 68, wherein the probe or primer comprises a nucleotide sequence from about 15 to about 30 nucleotides.

79. An Internet-based method for assessing a subject's risk for vascular disease, the method comprising:

- a) analyzing biological information from a subject indicative of the presence or absence of a polymorphic region of THBS1 and/or THBS4;
- b) providing results of the analysis to the subject via the Internet, wherein the presence of a polymorphic region of THBS1 and/or THBS4 indicates an increased risk for vascular disease.

80. A method of assessing a subject's risk for vascular disease, the method comprising:

- a) obtaining biological information from the individual;
- b) analyzing the information to obtain the subject's THBS1 and/or

THBS4 genetic profile;

- c) representing the THBS1 and/or THBS4 genetic profile information as digital genetic profile data;
- d) electronically processing the THBS1 and/or THBS4 digital genetic profile data to generate a risk assessment report for vascular disease, wherein the presence of a polymorphic region of THBS1 and/or THBS4 indicates an increased risk for vascular disease; and
- e) displaying the risk assessment report on an output device.

10 81. A method of assessing a subject's risk for vascular disease, the method comprising:

- a) obtaining the subject's THBS1 and/or THBS4 genetic profile information as digital genetic profile data;
- b) electronically processing the THBS1 and/or THBS4 digital genetic profile data to generate a risk assessment report for vascular disease, wherein the presence of a polymorphic region of THBS1 and/or THBS4 indicates an increased risk for vascular disease; and
- c) displaying the risk assessment report on an output device.

20 82. The method of claims 80 or 81, further comprising the step of using the risk assessment report to provide medical advice.

 83. The method of claims 80 or 81, wherein additional health information is provided.

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 84. The method of claim 83, wherein the additional health information comprises information regarding one or more of age, sex, ethnic origin, diet, sibling health, parental health, clinical symptoms, personal health history, blood test data, weight, and alcohol use, drug use, nicotine use, and blood pressure.

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85. The method of claim 81, wherein the THBS1 and/or THBS4 digital genetic profile data are transmitted via a communications network to a medical information system for processing.

5 86. The method of claim 85, wherein the communications network is the Internet.

87. A medical information system for assessing a subject's risk for vascular disease comprising:

- 10 a) means for obtaining biological information from the individual to obtain a THBS1 and/or THBS4 genetic profile;
- b) means for representing the THBS1 and/or THBS4 genetic profile as digital molecular data;
- c) means for electronically processing the THBS1 and/or THBS4 digital genetic profile to generate a risk assessment report for vascular disease; and
- 15 d) means for displaying the risk assessment report on an output device, wherein the presence of a polymorphic region of THBS1 and/or THBS4 indicates an increased risk for vascular disease.

88. A medical information system for assessing a subject's risk for vascular disease comprising:

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- a) means for representing the subject's THBS1 and/or THBS4 genetic profile data as digital molecular data;
- b) means for electronically processing the THBS1 and/or THBS4 digital genetic profile to generate a risk assessment report for vascular disease; and
- 25 c) means for displaying the risk assessment report on an output device, wherein the presence of a polymorphic region of THBS1 and/or THBS4 indicates an increased risk for vascular disease.

89. A computerized method of providing medical advice to a subject comprising:

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- a) analyzing biological information from a subject to determine the

subject's THBS1 and/or THBS4 genetic profile;

b) based on the subject's THBS1 and/or THBS4 genetic profile,
determining the subject's risk for vascular disease;

c) based on the subject's risk for vascular disease, electronically
5 providing medical advice to the subject.

90. A computerized method of providing medical advice to a subject comprising:

a) based on the subject's THBS1 and/or THBS4 genetic profile,
determining the subject's risk for vascular disease;

10 b) based on the subject's risk for vascular disease, electronically
providing medical advice to the subject.

91. The method of any of claims 89 or 90, wherein the medical advice comprises
one or more of the group consisting of further diagnostic evaluation, administration of
15 medication, or lifestyle change.

92. The method of claims 89 or 90, wherein additional health information is
obtained from the subject.

20 93. The method of claim 92, wherein the additional health information comprises
information regarding one or more of age, sex, ethnic origin, diet, sibling health, parental
health, clinical symptoms, personal health history, blood test data, weight, and alcohol use,
drug use, nicotine use, and blood pressure.

25 94. A method for self-assessing risk for a vascular disease comprising
a) providing biological information for genetic analysis;
b) accessing an electronic output device displaying results of the genetic
analysis, thereby self-assessing risk for a vascular disease, wherein the presence of a
polymorphic region of THBS1 and/or THBS4 indicates an increased risk for vascular
30 disease.

95. A method for self-assessing risk for a vascular disease comprising accessing an electronic output device displaying results of a genetic analysis of a biological sample, wherein the presence of a polymorphic region of THBS1 and/or THBS4 indicates an increased risk for vascular disease, thereby self-assessing risk for a vascular disease.

96. A method of self-assessing risk for vascular disease, the method comprising

- a) providing biological information;
- b) accessing THBS1 and/or THBS4 digital genetic profile data obtained from the biological information, the THBS1 and/or THBS4 digital genetic profile data being displayed via an output device, wherein the presence of a polymorphic region of THBS1 and/or THBS4 indicates an increased risk for vascular disease.

97. A method of self-assessing risk for vascular disease, the method comprising accessing THBS1 and/or THBS4 digital genetic profile data obtained from biological information, the THBS1 and/or THBS4 digital genetic profile data being displayed via an output device, wherein the presence of a polymorphic region of THBS1 and/or THBS4 indicates an increased risk for vascular disease.

98. The method of claims 96 or 97, wherein the electronic output device is accessed via the Internet.

99. The method of claims 96 or 97, wherein additional health information is provided.

100. The method of claim 99, wherein the additional health information comprises information regarding one or more of age, sex, ethnic origin, diet, sibling health, parental health, clinical symptoms, personal health history, blood test data, weight, and alcohol use, drug use, nicotine use, and blood pressure.

101. The method of any of claims 94 , 95, 96, or 97, wherein the biological information is obtained from a sample from an individual at a laboratory company.

102. The method of claim 101, wherein the laboratory company processes the biological sample to obtain THBS1 and/or THBS4 genetic profile data, represents at least some of the THBS1 and/or THBS4 genetic profile data as digital genetic profile data, and transmits the THBS1 and/or THBS4 digital genetic profile data via a communications network to a medical information system for processing.

103. The method of any of claims 94 , 95, 96, or 97, wherein the biological information is obtained from a sample from an individual at a draw station, wherein the draw station processes the biological sample to obtain THBS1 and/or THBS4 genetic profile data, and transfers the data to a laboratory company.

104. The method of claim 103, wherein the laboratory company represents at least some of the THBS1 and/or THBS4 genetic profile data as digital genetic profile data, and transmits the THBS1 and/or THBS4 digital genetic profile data via a communications network to a medical information system for processing.

105. A method for a health care provider to generate a personal health assessment report for an individual, the method comprising counseling the individual to provide a biological sample; authorizing a draw station to take a biological sample from the individual and transmit molecular information from the sample to a laboratory company, wherein the molecular information comprises the presence or absence of a polymorphic region of THBS1 and/or THBS4; requesting the laboratory company to provide digital molecular data corresponding to the molecular information to a medical information system to electronically process the digital molecular data and digital health data obtained from the individual to generate a health assessment report; receiving the health assessment report from the medical information system; and providing the health assessment report to the individual.

106. A method for a health care provider to generate a personal health assessment report for an individual, the method comprising requesting a laboratory company to provide digital molecular data corresponding to the molecular information derived from a biological sample from the individual to a medical information system to electronically process the
5 digital molecular data and digital health data obtained to generate a health assessment report; receiving the health assessment report from the medical information system; and providing the health assessment report to the individual.

107. A method of assessing the health of an individual, the method comprising:
10 obtaining health information from the individual using an input device; representing at least some of the health information as digital health data; obtaining biological information from the individual, wherein the information comprises the presence or absence of a polymorphic region of THBS1 and/or THBS4; representing at least some of the information as digital
15 molecular data; electronically processing the digital molecular data and digital health data to generate a health assessment report; and displaying the health assessment report on an output device.

108. The method of claim 107, wherein electronically processing the digital molecular data and digital health data to generate a health assessment report comprises using
20 the digital molecular data and digital health data as inputs for an algorithm or a rule-based system that determines whether the individual is at risk for a specific disorder.

109. The method of claim 107, wherein the individual has or is at risk of developing vascular disease, and wherein electronically processing the digital molecular data
25 and digital health data to generate a health assessment report comprises using the digital molecular data and digital health data as inputs for an algorithm or a rule-based system that determines the individual's prognosis.

110. The method of claim 107, wherein electronically processing the digital
30 molecular data and digital health data comprises using the digital molecular data and digital

health data as inputs for an algorithm or a rule-based system based on one or more databases comprising stored digital molecular data and/or digital health data relating to one or more disorders.

5 111. The method of claim 107, wherein electronically processing the digital molecular data and digital health data comprises using the digital molecular data and digital health data as inputs for an algorithm or a rule-based system based on one or more databases comprising (i) stored digital molecular data and/or digital health data from a plurality of healthy individuals, and (ii) stored digital molecular data and/or digital health data from one
10 or more pluralities of unhealthy individuals, each plurality of individuals having a specific disorder.

 112. The method of either of claims 110 or 111, wherein at least one of the databases is a public database.

15 113. The method of claim 107, wherein the digital health data and digital molecular data are transmitted via a communications network to a medical information system for processing.

20 114. The method of claim 113, wherein the communications network is the Internet.

 115. The method of claim 113, wherein the input device is a keyboard, touch screen, hand-held device, telephone, wireless input device, or interactive page on a website.

25 116. The method of claim 107, wherein the health assessment report comprises a digital molecular profile of the individual.

 117. The method of claim 107, wherein the health assessment report comprises a
30 digital health profile of the individual.

118. The method of claim 107, wherein the molecular data comprises nucleic acid sequence data, and the molecular profile comprises a genetic profile.

5 119. The method of claim 107, wherein the molecular data comprises protein sequence data, and the molecular profile comprises a proteomic profile.

10 120. The method of claim 107, wherein the molecular data comprises information regarding one or more of the absence, presence, or level, of one or more specific proteins, polypeptides, chemicals, cells, organisms, or compounds in the individual's biological sample.

15 121. The method of claim 107, wherein the health information comprises information relating to one or more of age, sex, ethnic origin, diet, sibling health, parental health, clinical symptoms, personal health history, blood test data, weight, and alcohol use, drug use, nicotine use, and blood pressure.

20 122. The method of claim 107, wherein the health information comprises current and historical health information.

25 123. The method of claim 107, further comprising obtaining a second set of biological information at a time after obtaining the first set of biological information; processing the second set of biological information to obtain a second set of information; representing at least some of the second set of information as digital second molecular data; and processing the molecular data and second molecular data to generate a health assessment report.

30 124. The method of claim 123, further comprising obtaining second health information at a time after obtaining the health information; representing at least some of the second health information as digital second health data and processing the molecular data,

health data, second molecular data, and second health data to generate a health assessment report.

5 125. The method of claim 107, wherein the health assessment report provides information about the individual's predisposition for vascular disease and options for risk reduction.

10 126. The method of claim 125, wherein the options for risk reduction comprise one or more of diet, exercise, one or more vitamins, one or more drugs, cessation of nicotine use, and cessation of alcohol use.

127. The method of claim 107, wherein the health assessment report provides information about treatment options for a particular disorder.

15 128. The method of claim 127, wherein the treatment options comprise one or more of diet, one or more drugs, physical therapy, and surgery.

20 129. The method of claim 107, wherein the health assessment report provides information about the efficacy of a particular treatment regimen and options for therapy adjustment.

130. The method of claim 107, further comprising storing the molecular data.

25 131. The method of claim 130, further comprising building a database of stored molecular data from a plurality of individuals.

132. The method of claim 107, further comprising storing the molecular data and health data.

30 133. The method of claim 132, further comprising building a database of stored

molecular data and health data from a plurality of individuals.

134. The method of claim 133, further comprising building a database of stored digital molecular data and/or digital health data from a plurality of healthy individuals, and
5 stored digital molecular data and/or digital health data from one or more pluralities of unhealthy individuals, each plurality of individuals having a specific disorder.